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A Investigation Report of Social Marketing /Communication and Education of IDD

IDD is seriously endemic in China. The findings showed IDD exists in 30 provinces in China, which is from Newborns TSH testing in 30 provincial capital cities in 1995. Salt iodination is the best method for IDD elimination because of its safety, effectiveness, ecominic and easily spread. In order to realize the goal of IDD elimination by 2000, Governments actively carried out and universe the stratage "All People Use Qualified Iodated Salt", and have made great achievements. But in the review for the programme of IDD elimination in 1996, it was found that Iodated salt was stored in large quantity in many places but the sale of iodated salt decreased. In order to draft up relevant measures, on the basis of the tour study of IDD in Anhui, field investigations were conducted in Hezheng County, Gansu and Fengning County, Hebei on the social marketing and health education of IDD.

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Methods

1. Collecting related data of iodated salt supply and sales and IDD situation in Hezheng county and Fengning county.

2. According to above collected data in Hezheng county, 120 school children aged 8~10 and 120 habitants in three townships were selected randomly, the field investigation was operated by trained health staff with united questionnaires and 240 questionnaires were acquired.

3. According to above collected data in Fengning county, 412 inhabtants from 412 households at 4 villages in 3 townships and 557 school children in 9 schools were selected, field investigations were conducted by trained investigators with different questionnaires.

4. Above data analysis with Epi Info 6.0 statistics software.

Results from Hezheng's Data

1. Hezheng county is under the jurisdiction of Lingxia Hui autonomous prefecture in Gansu province and with a population of about 188 thousands. Han and Hui nationality individually occupy 56% and 44% of the total population. The county is a poverty county with IDD. The financial income was 159,83 millions yuan RMB, and per capita income was 705 yuan RMB in 1996.

2. The situation of Iodated salt supply and sales

In 1996, the planning sales was 680 tons iodated salt, but the actual sales was 300 tons; in 1997, the planning sales was 728 tons, the actual sales was 57.5 tons in the first quarter. Non-iodated salt came from Lingxia city and Qinghai province.

3. IDD knowledge and practice and ways to get the knowledge of habitants and pupils 3.1 Hearing of IDD: 70 persons heard of IDD and were 58.33% of 120 habitants; 83 children

Table 1 The sit	uation of heat	ring of IDD of habit	ants and sch	ool children
_	Ha	Schoo	ol Children	
	Number	Percentage(%)	Number	Percentage(%)
Hearing of IDD	70	58.33	83	69.2
No	50	41.67	37	30.8

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heard of IDD and were 69.2% (Table 1).

3.2 Knowing the harm and knowledge of IDD: In habitants and school children investigated, more than half of them didn't knew the harm of IDD, and nearly 70% of the people knew that the best method for prevention and control of IDD is using Iodated Salt (Table 2).

Table 2 The si	The situation of knowing related IDD knowledge					
	ŀ	labitants	School Children			
	Number	Percentage(%)	Number	Percentage(%)		
Knowing the harm	54	45	58	48.33		
Knowing related the prevention		69.17	83	69.17		
and control knowledge of IDD) <u>·</u>		•			

3.3 Behavior of buying and using salt: 41 persons actively bought salt at township supply and marketing shop, 2 people got salt from government, the total occupied 35.83% of 120 habitants; only 16 persons used iodated salt correctly in the process of cooking and was 13.33% of the people.

3.4 Ways to acquire related IDD knowledge: In 120 habitants, 37 persons got the knowledge from school communication and were 30.08%, and 23 persons got them from neibours and were 19%; 83 pupils got them from teachers and were 69.17% of the total school children, 70 pupils got them from TV and broadcast programs and were 58.2%.

Results from Fengning's Data

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1. Fengning county is under the jurisdiction of Chengde city in Hebei province and has 11 nationalities with a total population of 368 thousands. Man population occupies 59.8% of the total population. The county has 26 townships and 310 administrative villages. The GNP was 1.227 billion yuan RMB, per capita income is 1314 yuan RMB.

2. the supply and marketing of iodated salt in the Fengning county: the supply of iodated salt had been increasing during the 1993 to 1996, and reached to 1969.1 tons in 1996 including 902.1 tons of refined iodated salt (The iodated salt includes three types: the crude, the crushed and washed, and the refined). The actual sales is 1811 tons, more than 140 tons non-iodated salt from illegal sources was caught in 1994, and 60 tons in 1995 and 15 tons in 1996. The non-iodated salt mainly came from Inner Mongolia.

3. The monitoring of iodated salt both in production unit and sales units

According to the sources from Fengning's office of IDD control, 345 out of 350 salt samples from the storage house were qualified and the qualified rate was 98.6%. In 608 samples from the supply and marketing shops, 603 samples were qualified and the qualified rate was 99.2%.

4. the basic information of the population investigated

In 412 people from 412 families, males 180(43.7%) and females 232 (56.3%), the range of age was from 14 to 78, mainly from 20 to 60 and was 84.55% of the total habitants; most of them were peasants and is 97.65% of the people.

In accordance with education levels, 31.3% of the habitants held primary school level, 23.8% own junior middle level and 37.4% was under primary school (table 3).

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Table 3	Distribution of	education levels

Education level	Number	Percentage(%)
Illiteracy	131	31.8
Under elementary	23	5.6
Primary school	129	31.3
Junior middle school	98	23.8
Above senior middle school	31	7.5

Among 557 school children from 9 primary schools, males 294(52.8%), females 263(47.22%), 487 children were from three to five grade class and 87.4% of the total pupils. the range of age was from 7 to 15, mainly from 8-14.

5. Knowing knowledge of IDD prevention and control and ways to get the knowledge

5.1 Among 412 habitants, 228 people heard of IDD and was 55.3%; In 557 pupils, 290 children heard of IDD and was 52.1%.

5.2 In the aspect of the knowledge of IDD prevention: Among 412 habitants, 255(61.9%) didn't know IDD caused by iodine deficiency, 242(58.7%) didn't know that IDD is preventable ; 288(69.9%) didn't know that iodated salt is the best way to prevent IDD.

Among 557 pupils, 348(62.5%) didn't know IDD caused by iodine deficiency, 313(56.2%) didn't know that IDD is preventable, and 364(65.4%) didn't know that iodated salt is the best way to prevent IDD (table 4).

Table 4	Kno	wing the know	wledge of th	ne IDD preventi	on	
	Habitants			School Children		
	Yes	No	Subtotal	Yes	No	Subtotal
Hearing of IDD	228(55.3%)	184(44.7%)	412	290(52.1%)	267(47.9%)	557
IDD caused by iodine deficiency	157(38.1%)	255(61.9%)	412	209(37.5%)	348(62.5%)	557
IDD is preventable	170(41.3%)	242(58.7%)	412	244(43.8%)	313(56.2%)	557
Iodated salt is best way to prevent IDD	124(30.1%)	288(69.9%)	412	193(34.6%)	364(65.4%)	557

5.3 For the harm of IDD: Among 412 habitants, 205 people knew that iodine deficiency can cause goiter and was 49.8%; 147 people knew that iodine deficiency can cause cretin and is 35.7%; In 557 pupils, the above items were respectively 157(28.2%) and 177(31.8%) (table 5).

	Ha	abitants	Scho	ol children
-	Number	Percentage(%)	Number	Percentage(%)
Goiter	205	49.8	157	28.2
Cretinism	147	35.8	177	31.8
Abortion, premature birth, stillbirth	74	18.0		
Congenital monster	80	19.4		

 Table 5
 Knowing the harm of IDD of habitants and school children

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5.4 Ways to get IDD knowledge: In 228 habitants who heard of IDD, 118 persons got the information from TV program and was 51.3% of the total habitants, 114 persons got it from doctors and was 50%. among 290 pupils who heard of the IDD, 127 pupils got it from TV rogram and was 43.8% of the total school children, 86 pupils got it from doctors and was 29.7%; in addition, the pupils who heard of the information from material out of class, their parents and

newspaper were respectively 48(16.6%), 46(15.9%) and 45(15.5%), but only 39(13.4%) pupils got it from their teachers.

5.5 Approaches to get the knowledge of IDD prevention afterwards: in 412 habitants, 248(60.2%) and 214(51.9%) would like to learn the IDD knowledge from doctors and TV program . there were also 42(10.12%) people who would like from broadcast program.

5.6 In addition we investigated the habitants whether the herds can also catch IDD, there were only 59 (14.3%) people to know the information in 412 habitants, 353 persons answered "I don't know".

6 Attitude to Get IDD Information of Habitants and School Children

u. a mong 412 hadmans, 389 people hope to know IDD information or more and was 94.4% of them. among 557 pupils, 451 pupils hoped to know IDD information and more and was 81% of them (table 6).

<u>I able 6</u> whether the habitants and students hope to know IDD knowledge or more							
	Hope to know	Percentage	Not hope to know	Percentage	Total		
Habitants	389	94.4	23	5.6	412		
School children	451	81	106	19	577		

Whathen the babies of an I should be a to be a to be

6.2 Among 412 habitants, 383 persons would like to propagate the IDD information to other persons and was 93% of them, there were 29 persons (7%) to be not willing to propagate it .

7. Ways and behaviour of buying the iodated salt.

7.1 For the question of Which salt you eat in your family, 254 people answered iodated salt and were 62.7% of 412 habitants investigated, 91 answered non-iodated salt and are 22.1%, 67 answered "I don't know" and were 16.3%. We furtherly required the 91 persons answering noniodated salt and acquired that 61 persons thought the price of iodated salt was more expensive and other 30 thought it was not convenient for long walk and paying cash. But in 67 answering "I don't know", there was 52 not to know iodated salt.

7.2 For channels of purchasing salt, 289 habitants is to buy it at township supply and marketing shops and were 68.9% of 412 habitants, and other 119 were to buy it from illegal mongers to sell salt and were 28.9%.

7.3 For behavior of using salt, 178 of 412 families added salt at the end of cooking a dish and was 43.2%, 133 of them added food and salt together at the beginning of cooking a dish and was 32.2%(Table 7).

Table / Distribution of behaviors of using sait of Habitants					
	Number	Percentage			
Adding salt at the end of cooking	178	43.2			
Adding foods and salt together at the beginning of cooking	133	32.3			
Adding salt in boiled oil at the	63	15.3			
beginning of cooking					
Other	38	9.2			
Total	412	100			

Table 7 Distribution of behaviors of using salt of Habitants

7.4 For the question of whether to feed herds with iodated salt, 211 of 412 families used iodated salt to feed herds and was 51%, 201 of them didn't use iodated salt to feed herds and was 49%.

8. Results of testing the sample of salt from households with the semi-quantitative method In 410 samples from 410 households with the semi-quantitative test, 110 samples were non-iodated salt and were 26.83% of them, 79 samples were not qualified iodated salt with 10ppm of the iodine concentration and were 19.27 (Table 8).

	with t	he semi-qu	antitative	method		
		Iodine co	oncentratio	n in Salt		
0 ppm	10 ppm	20 ppm	30 ppm	40 ppm	50 ppm	Total
110	79	116	73	29	3	410
26.83	19.27	28.29	17.80	7.07	0.73	100
	110	0 ppm 10 ppm 110 79	Iodine co 0 ppm 10 ppm 20 ppm 110 79 116	Iodine concentratio 0 ppm 10 ppm 20 ppm 30 ppm 110 79 116 73	110 79 116 73 29	Iodine concentration in Salt 0 ppm 10 ppm 20 ppm 30 ppm 40 ppm 50 ppm 110 79 116 73 29 3

Table 8	•	Results of testing the sample of salt from households

* Testing kits from Chengde Endemic Diseases Prevention Institute

Discussion

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1. The aim of the social marketing study is to study the 4P (product, price, promotion and places) centered on Customs. The customers are habitants and school children; the product is qualified iodated salt; the price is price of iodated salt, but the use value of iodated salt is the most important for customers, which is to prevent and control IDD; the promotion is various of health intervention activities, the executors is IDD control and health education staff; the places are too many for us, such as health service units. supply and marketing shops and retail shops, etc.

2. Fengning county is a national level poverty county with serious IDD. According to data from the county statistics bureau, per capita GNP reached 3334.2 yuan RMB and per capita income was 1314 yuan RMB in 1996, the economic situation is undoubtedly helpful for IDD elimination, but the per capita income didn't tally with the income of actually investigated people. For the supply and sales of iodated salt, from 1993 to 1996, the supply of iodated salt still went up, in 1996 the supply reached 1969.1 tons, the actual sales was 1811 tons. If counting according to 6 kg iodated salt per person per year (15grams per person per day) and the total population of 368 thousands, the total consume could be about 2208 tons in Fengning, that the lack is 397 tons means 18% of the population is still using non-iodated salt, but in 1996, 15 tons illegal salt were caught, therefore, we think illegal salt is seriously attacking and destroying the market of iodated salt.

Hezheng county is a poverty county with IDD, per capita income was 705 yuan RMB. For the supply and sales of iodated salt, the planning sales was 680 tons, but th actual sales was 300 tons, If counting according to 6 kg iodated salt per person per year (15grams per person per day) and the total population of 188 thousands, the total consume could be about 1128 tons in Hezheng, but the actual sales is only 26.5% of the theoretical demand of 1128 tons. What can make up for the so large lack of the iodated salt market? we think only non-iodated salt and illegal salt.

From the above analysis, that the coverage of qualified iodated salt is rather low in the two counties is obvious. it shows the situation of IDD elimination is serious.

3. According to the general program of IDD elimination, the coverage of qualified iodated salt reaches 75% by 1995. But the results from the investigation, 26.83% of 412 households investigated used non-iodated salt, 19.27% of the households use iodated salt with only 10ppm, these mean the coverage of qualified iodated salt is only 53.9% and the above analysis in item 2 is verified. These problems show we should have some powerful measures to attack the illegal salt, improve productive techniques and the monitoring of the process of transportation and storage of iodated salt, another important point is to provide necessary directions of iodated salt storage and

use for habitants. Because the qualified iodated salt is as our product, our task is to promote consumers to buy and reasonably use the product so as to eliminate IDD.

4. From the habitants and school children's knowledge of IDD, the findings from Fengning tell us that half of the investigated habitants heard of IDD and more than 1/3 of the habitants knew IDD caused by iodine deficiency, 40% of them knew IDD can be preventive, more than 30% of them knew the iodated salt is the best means to prevent IDD; for the harm of IDD, more than 1/3 of them knew and nearly 30% of the investigated school children knew thyroid and cretinism caused by iodine deficiency, about 18% of the habitants knew iodine deficiency is one of causes to lead to abortion, premature birth, stillbirth and congenital monster.

The results from Hezheng, about 60% of the investigated habitants and school children heard IDD, more than half of them knew the harm of IDD, nearly 70% of them knew the iodated salt is the best means to prevent IDD.

These results show a part of habitants and school children know the knowledge and harm of IDD, this is a good basis for our promotion. But these findings also tell us the percentage of people knowing the knowledge and harm of IDD is still rather low, it is urgent and necessary to strengthen health education.

5. For ways and future welcoming ways to get the IDD information, the results from investigation in Fengning county show Doctors' instruction and TV programs are the most popular ways, because they are very close to the customer. Therefore strengthening to train village health staff is very necessary and producing good TV health education programs also is important. But they show the situation of developing health education in primary school is not good, only 39 pupils (7%) got IDD information from their teachers, so we should enforce to develop health education in school children because children are our future customer and key point in our health education chain of Teacher-Pupil-Parents-Community. But these children would like to know the information to prevent IDD, in 557 pupils, 451 (81%) want to know thw information, in the same way, 389 of 412 habitants would like to know the information is 94.4%, and 383 habitants would like to propagate the information to others and is 93%. These are very benefit for our promoting our product with suitable ways.

The findings from Hezheng county show teachers, TV programs and broadcast programs are main channels of pupils' acquiring IDD information; 30% of habitants (37 persons) got the information from propagation from schools. These explain Hezheng county made some efforts to develop the action of the health education chain of Teacher-Pupil-Parents-Community.

From the above analysis, our promotion should form the pattern of multi-form and multi-chanal, all of village health staff, teachers, supply and marketing shops and TV are good channels, in the same way, we should appreciate the health education chain of Teacher-Pupil-Parents-Community.

6. From ways and behaviour of buying the iodated salt, in 412 habitants, 62.7% of them answered iodated salt, 22.1% of them answered non-iodated salt, 16.3% answered "I don't know"; 68.9% of them are to buy it at township supply and marketing shops, and other 28.9% are to buy it from illegal mongers to sell salt. In addition, We furtherly required the 91 persons answering non-iodated salt and acquired that 61 persons thought the price of iodated salt was more expensive and other 30 thought it was not convenient for long walk and paying cash. Because of the lack of information of diseases prevention and poor economy of some habitants and long distance to township supply and marketing shop, illegal mongers make use of these points and send salt to habitants' house, and give price of salt much more lower than the price of iodated salt and permit to use other agricultural products to change salt so that part of habitants who are very poor buy their salt. Therefore on the one hand we must attack illegal mongers seriously, on the other

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hand we carry out some good methods to beat the illegal mongers' advantages so that we can give rural habitants more convenience, for example, the system of sending and selling iodated salt in some provinces.

Suggestion

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1. The government should pay more attention to IDD programme and concerned sectors cooperate closely.

2. Improve the quality of iodated salt. give illegal mongers an powerful attack, supply and marketing agencies are active to send and sell iodated so as to give the masses convenience.

3.Strengthen to train village health workers, and develop community health education, and take advantage of promoting health knowledge and behavior through multi-channel and multi-form.

4. Pay more attention to health education in primary schools, and strengthen medium such as TV and broadcast to propagate health knowledge and behaviors.